UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,509	10/31/2003	Dhruva Ranjan Chakrabarti	200314557-1	9606

22879   7590   02/25/2008
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
CHOU, ANDREW Y

ART UNIT	PAPER NUMBER
2192	\

NOTIFICATION DATE	DELIVERY MODE
02/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

PTOL-90A (Rev. 04/07)

		Application No.	Applicant(s)
		10/698,509	CHAKRABARTI ET AL.
Office Action Summary		Examiner	Art Unit
		ANDREW CHOU	2192

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-13 have been examined. Claims 1-10, and 12 have been amended.

Response to Amendment

2.   Applicant's arguments with respect to claims 1-13 have been considered but are

moot in view of the new ground(s) of rejection. (See Carini made of record below)

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
>
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
>
> conditions and requirements of this title.

4.   Claims 13 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Claims 13 are non-statutory as being "a computer program product comprising a

computer-usable medium having computer-readable code embodied therein, the

computer program product being a source code compiler", thus the computer program

product is not yet embodied in executable code format as a computer component. Thus,

the computer program product is computer listings *per se*, i.e., the descriptions or

expressions of the programs, are not physical "things." They are neither computer

components nor statutory processes, as they are not "acts" being performed. Such

claimed computer programs do not define any structural and functional

interrelationships between the computer program and other claimed elements of a

computer which permit the computer program's functionality to be realized. In contrast,

a claimed computer- readable medium encoded with a computer program is a computer

element which defines structural and functional interrelationships between the computer

program and the rest of the computer which permit the computer program's functionality

to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at

1035. Accordingly, it is important to distinguish claims that define descriptive material

per se from claims that define statutory inventions. MPEP 2106.01 (I)

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Carini

US 5,740,443 (hereinafter Carini).

Claim 1:

Carini discloses a method of compiling a computer program with inline specialization,

the method comprising: given a call-graph if multiple call-chains in the call-graph have a

common call site, inlining the common call site in one or more of the call-chains, without

inlining the common call site into all of said multiple call-chains having the common call

site (see for example column 9, lines 30-41, "...selective automatic inlining...", column 9,

lines 10-20, FIG. 3, item 301, "sub1", and associated text).

Claim 2:

Carini further discloses the method of claim 1, further comprising:

whenever a call site from routine x to routine y is inlined, new call sites are added from

routine x to all routines inlinable within routine y (see for example column 9, line 7, "2.

Select Incoming edges for inlining or cloning.").

Claim 3:

Carini further discloses the method of claim 2, further comprising:

materialization of summary information for the new call sites added to the call-graph

(see for example column 10, lines 23-43, FIG. 5, step 503, and associated text).

Claim 4:

Carini further discloses the method of claim 3, further comprising:

addition of the new call sites to a global work-list so that the new call sites are

considered for inlining (see for example column 7, lines 50-66. FIG. 1, "v3", v4", and

associated text).

Claim 5:

Carini further discloses the method claim 4, further comprising:

addition of dependence relationships between call sites, wherein if a new call site, y, is

added because of inlining of call site, x, then y is dependent on x (see for example FIG.

3, item 303, "sub3", and related text).

Claim 6:

Carini further discloses the method of claim 5, further comprising:

patching of the new call site, y, during inline transformation of call site, x, with and

generating an intermediate transformation for the new call site, y (see for example

column 9, lines 20-30).

Claim 7:

Carini discloses an apparatus (see for example FIG. 4, and related text) for compiling a

computer program with inline specialization, the apparatus comprising:

memory configured to store computer-readable instructions and data (see for example

FIG. 4, item 114, "RAM");

a processor configured to access said memory and to execute said computer-readable

instructions (see for example FIG. 4, item 116, "CPU");

computer-readable instructions stored in said memory and configured to inline a

common call site in one or more of the call-chains in a call-graph, without necessarily

inlining the common call site into all call-chains having the common call site (see for

example column 9, lines 30-41, "...selective automatic inlining...", column 9, lines 10-20,

FIG. 3, item 301, "sub1", and associated text).

Claim 8:

Carini further discloses the apparatus of claim 7, wherein whenever a call site from

routine x to routine y is inlined, new call sites are added from routine x to all routines

inlinable within routine y (see for example column 9, line 7, "2. Select Incoming edges

for inlining or cloning.").

Claim 9:

Carini further discloses the apparatus of claim 8, wherein materialization of summary

information for the new call sites added to the call-graph (see for example column 10,

lines 23-43).

Claim 10:

Carini further discloses the apparatus of claim 9, wherein the new call sites are added to

a global work-list so that the new call sites are considered for inlining (see for example

column 7, lines 50-66).

Claim 11:

Carini further discloses the apparatus of claim 10, wherein dependence relationships

are created between call sites (see for example FIG. 3, item 303, "sub3", and related

text).

Claim 12:

Carini further discloses the apparatus of claim 11, wherein the inline transformation

patches up an intermediate representation of the new call sites by considering the

dependence relationships) before potentially inlining the new call sites (see for example

column 9, lines 20-30).

Claim 13:

Carini discloses a computer program product comprising a computer-usable medium

having computer-readable code embodied therein, the computer program product being

a source code compiler with cross-module optimization (see for example Figure 5, and

related text), the compiler including and inline specialization feature such that given a

call-graph, if multiple call-chains in the call-graph have a common call site, the common

call site is inlined in one or more of the call-chains graph, without necessarily being

inlined into all of the multiple call-chains having the common call site (see for example

column 9, lines 30-41, "...selective automatic inlining...", FIG. 3, item 301, "sub1", and

associated text).

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andrew Y. Chou whose telephone number is (571) 272-

6829. The examiner can normally be reached on Monday-Friday, 8:00 am - 4:30 pm. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam, can be reached on (571) 272-3695.

The fax phone number for the organization where this appiication or proceeding is

assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding

should be directed to the TC 2100 Group receptionist whose telephone number is (571)

272 2100.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair- direct.uspto.,qov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll free)

AYC

TUAN DAM
SUPERVISORY PATENT EXAMINER